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*Factors Affecting Moral Judgment in Business Students*

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**ABSTRACT**

This study examines the relationship between college major, religious orientation, informal curriculum, and certain student life experiences and moral judgment at an urban commuter institution. Particular attention is paid to business students. Research questions included the effect of college major, religious orientation, and informal curriculum on moral judgment. Students answered questions relating to the constructs using a survey incorporating Sarason's Social Support questionnaire and Batson and Ventis's Religious Orthodoxy Scale. Moral judgment was measured by the Defining Issues Test. Responses were analyzed using least squares multiple regression analysis. The results indicated statistically significant relationships involving moral judgment with college major, social support, and religious orientation. Finally, a t-test was undertaken showing that liberal arts and other students outscored business students on the Defining Issues Test. Implications for research and practice are offered.

**KEY WORDS** Ethics; Social Support; Student Development; Social Capital; Religious Orthodoxy

The weight of the evidence is that the college experience has a unique positive influence in advancing moral judgment (Pascarella and Terenzini 2005). If college indeed has a significant influence on students, then college is an excellent place to help foster a more ethical society. This paper examines a study, based on a student survey, which examines student moral judgment at a point in time. It has become clear that moral issues are integrated into the context of various disciplines and that a renewed emphasis on moral judgment is needed (McNeel 1994a). Although abundant literature relates the effects of certain variables on moral judgment, much of the research is dated and certain variables are not yet fully explored.

Although we pay a lot of attention to helping students to develop morally, we are not sure how to accomplish this goal. Derryberry and Thoma (2000) remind us that we have no specific advice from the literature on designing programs to foster moral judgment. Rest (1986) declares that although a number of factors are known to influence moral judgment, we are unable to determine why.

Rest and Narvaez (1994) remind us that there more than 10,000 ethical interventions annually are reported in higher education. Kohlberg (1973) and Rest (1986) have reviewed more than 150,000 student responses to interviews and questionnaires. Although we pay a lot of attention to helping students to develop morally, we are not sure how to accomplish this goal.

In addition, this study adds to the research by examining influences at a regional working-class commuter university. The student population is distinctly different, and the influence of variables on this population may be different from the influence of the variables on other populations. By examining the influence of certain variables on a distinct population of students, we hope to identify characteristics of students who display higher moral judgment and to develop those characteristics in other students. By encouraging the development of moral judgment, we hope to encourage moral actions.

Morality deals with diverse and multifaceted challenges and is a problem in our society. Recent business moral dilemmas involve large and successful business firms, including Enron, MCI WorldCom, Parmalat, Tyco, Dell, Sunbeam, and Health South; the savings and loan crisis; the mortgage crisis; and child labor. Some, including economist Milton Friedman, believe that corporate executives' "responsibility . . . generally will be to make as much money as possible while conforming to their basic rules of the society." Adam Smith took a contrary view in his *The Wealth of Nations*, saying, "All for ourselves, and nothing for other people, seems, in every age of the world, to have been the vile maxim of the masters of mankind." While some aspects of the concept deal with crime, destructive behavior, and socialization, others deal with knowing what is right (Rest and Narvaez 1994). Concerns for the moral judgment of professionals often deal with deciding between conflicting values, with each value representing something good.

Because business professionals have completed years of schooling and supervised work, they usually have developed some impulse control, self-discipline, self-regulation, ego strength, and social skills. They need to be able to determine what is the right course of action, which assumes that some ways of determining what is right are more justifiable than others and that there is agreement on which positions are more ethical (Rest and Narvaez, 1994).

This study examines the effect of certain variables on a particular group of students and looks for factors that are important influences for this group in terms of moral judgment. By developing students along these factors, we hope to encourage a more ethical society.

## LITERATURE REVIEW

### *Moral Judgment*

Moral judgment is a process in which a person arrives at a judgment of what is the moral thing to do in a dilemma (Boss 1994). Kohlberg studied morality at Harvard in the 1950s. He asserted that the individual rather than society determines what is right and wrong. He described moral judgment as different relationships between self, society, and rule expectations. The basis of his reasoning is that there is a set of universal moral principles that are held by rational moral people (Kohlberg 1976). He defined moral judgment as characterized by three types of relations, between self, society, and rule expectations. The individual interprets situations, derives psychological and moral meaning from social events, and makes moral judgments. Sometimes, conforming to social norms can be wrong. Kohlberg described six stages within his preconventional, conventional, and postconventional moral levels (Kohlberg 1976).

James Rest built upon Kohlberg's research to more fully develop the cognitive theory of moral judgment. Rest (1979, 1986) described Kohlberg's work as based on concepts of organizing cooperation. Rest stated that cooperation is a fundamental structure for interpreting the social world. Cooperation helps people to arrive at the most important aspects of a moral situation. Rest believed that cooperation provides a way to link the relationships of the parties to each other.

Rest developed the Four Component Model to explain moral behavior. He recognized that judgment is just a part of moral action. The model explains the psychological processes needed to perform morally in a dilemma. It includes moral sensitivity or the ability to identify a moral issue in a dilemma, the use of a moral judgment framework, the moral motivation to put moral values ahead of other values, and the moral character to take the morally correct action (Rest 1986).

Rest developed an objective systematic test called the Defining Issues Test based on the scenarios of Kohlberg's Moral Judgment Interview. This test measures one's preference for more complex differentiating and discriminating moral considerations. Respondents encounter moral dilemmas and choose alternative courses of action, noting reasons behind their choices. This test calls on respondents to reflect upon their current moral judgment framework. The test measures the percentage of postconventional moral judgment used in responding (the *p*-score). This *p*-score reflects the percentage of reasons that respondents tell us refer to rights, values, and universal principles.

Formal education represents a special experience that is associated with growth in moral judgment (Rest and Narvaez 1991). Research confirms that college affects moral development (Rest and Narvaez 1991). College students live out recurring themes: gaining competence and self-awareness, learning control and flexibility, balancing intimacy with freedom, finding one's voice or vocation, refining beliefs, and making commitments (Chickering and Reisser 1993). Various factors influence moral judgment (Pascarella and Terenzini 2005; Rest 1986). Studies need to account for the differences between groups of students to determine what affects the growth in moral judgment.

Rest, Narvaez, Thoma, and Bebeau (2000) noted that groups may differ in the development of moral judgment.

### *College Major*

A large number of studies are devoted to the effect of college major on moral judgment (Pascarella and Terenzini 2005; Rest 1986). While most of the studies suggested that business majors did not show the gains in moral judgment that other students achieved (King and Mayhew 2002; McNeel 1994b; Rest 1986), a few studies indicated that the major did not affect moral judgment (Ponemon and Glazer 1990; Snodgrass and Behling 1996). Pascarella and Terenzini (2005) reported inconclusive results. Although Pascarella and Terenzini (2005) stated that the college major was inconclusive, numerous studies have reported that a business college major limits moral judgment. A number of studies have reported the effects of college major on moral judgment. These studies have reported that vocationally oriented majors such as business and education may have a significantly negative effect on moral judgment (Goodlad, Soder, and Sirotnik 1990; McNeel 1994b; Scott 1988; Sims and Sims 1991). Baxter and Rarick (1987) reported that business students were inadequately developed in morality. Similar results were reported by Armstrong (1984, 1987); Arnold and Ponemon (1991); King and Mayhew (2002); Icerman, Karcher, and Kennelly (1991); Lampe and Finn (1992); McNeel (1994b); Nucci and Pascarella (1987); Ponemon and Gabhart (1994); Ponemon and Glazer (1990); and Rest (1986).

Accounting students fared just as poorly. Accounting students need to learn to negotiate ethical issues with four constituent groups: their client organizations, their professional accounting firms, the accounting profession, and various regulatory bodies. They are subject to additional factors that may cause ethical conflicts. These include client firms that pay them while the general public is the beneficiary of their work. Lucrative consulting services are provided at the same time as an audit. Status is dependent upon the individual's ability to attract new business. Affiliation with the client's personnel may diminish their objectivity. Peer pressure within the firm can promote ethical conflicts. Competition for clients may reduce the quality of the provided services. Job security within the firm may cause personnel to avoid disclosing unfavorable sensitive information (Ponemon and Gabhart 1994).

Research indicates that accounting students struggle with ethical issues. St. Pierre, Nelson, and Gabbin (1990) reported that accounting students displayed higher moral judgment scores than other business majors, but lower scores than other majors. Icerman (1991) agreed that accounting students were found to have higher moral judgment than other business students. Some studies found that accounting students and certified public accountants (CPAs) in practice had lower moral judgment scores than other students (Armstrong 1984, 1987; Lampe and Finn 1992). Ponemon and Glazer (1990) and Armstrong (1987) found that accountants' educational processes inhibited students' abilities to develop ethics and integrity. Shaub (1994) found that accounting students and CPAs had lower moral judgment scores than college-educated adults and that the higher

the CPA's position in a firm, the lower the CPA's Defining Issues Test (DIT) score. Accountants do not develop moral judgment commensurate with individuals having similar socioeconomic and educational backgrounds (Arnold and Ponemon 1991).

Other studies reported conflicting results. Ponemon (1990) reported that accounting students and CPAs from liberal arts colleges reported high levels of moral judgment. Jeffery (1993) stated that accounting students had higher moral judgment than either other business students or non-business students. Snodgrass and Behling (1996) found no difference between business and non-business students in moral judgment. These studies point out the inconsistency of results regarding accountants' and business students' moral judgment.

### *Religious Influence*

A large number of studies report the effects of religious orientation on moral judgment. We used religious orthodoxy as a construct of religious influence. Generally, more liberal religious affiliations, which rely less on a literal interpretation of the Bible than more fundamentalist approaches, have been found to produce greater gains in moral judgment (King and Mayhew 2002; McNeel 1994b). Higher orthodoxy scores tended to inhibit moral judgment in studies published by Dirks (1988), Holly (1991), King and Mayhew (2002), Lawrence (1979), McNeel (1994b), Rest (1979, 1986), and Shaver (1987).

### *Informal Curriculum*

Measures of the informal curriculum included measures of support and specific informal curriculum experiences. Cobb (1976) defined social support as the individual belief that one is cared for, loved, esteemed, and valued, and belongs to a network of communication and mutual obligations. Measures of social support were taken from the Sarason Social Support Questionnaire (SSQ). The SSQ has been used widely in clinical and social settings and has been found to relate to various individual differences (Sarason et al. 1987). This may be the first time it is used to relate to moral judgment.

Literature on the effect of service-learning is abundant. Dewey (1939), Kohlberg (1971), and Rest (1986) found that actual experience in confronting moral issues, particularly in an out-of-classroom environment, is important for moral judgment. Many other studies have reported that service-learning fosters moral judgment and identity (Astin and Sax 1998; Boss 1994; Eyler and Giles 1999; Gray et al. 1996; Honig 1981; McNeel 1991; Nucci 1985; Rhodes 1997). A few studies found no relevance (Cram 1998; Green 1991).

A number of studies reported positive effects from extracurricular experiences (Astin 1973, 1993; Bowen 1978; Chickering and Reisser 1993; Feldman and Newcomb 1969; Finger, Borduin, and Baumstark 1992; McNeel 1994a). Contact with faculty was also reported to increase moral judgment (Gaff and Gaff 1981; McNeel 1994a; Pascarella

and Terenzini 2005). Role taking was found to be beneficial in a number of studies (Blatt and Kohlberg 1973; Ernsberger 1976; Finger et al. 1992; Kohlberg 1969; McNeel 1994b; Rest 1986).

### *Hypothesis*

The following null and alternative hypotheses were developed:

*H<sub>n</sub>: Student p-scores on the Defining Issues Test (DIT) cannot be statistically significantly predicted through a combination of the variables: religious orientation, major, and exposure to the informal curriculum.*

*H<sub>a</sub>: Student p-scores on the Defining Issues Test (DIT) can be statistically significantly predicted through a combination of the variables: religious orientation, major, and exposure to the informal curriculum.*

Specific research questions were asked:

1. What is the effect of college major on the development of moral judgment?
2. How do religious orientations influence the growth of moral judgment?
3. What effect does the informal curriculum exert on moral judgment, especially these elements: social support, peer relationships, contact with faculty, service learning, extracurricular activities, and role taking?

The hypothesis of this study suggests that certain religious orientations, majors, and informal curriculum experiences will affect changes in students' moral judgment. The dependent variable for the study is moral judgment, which is represented by the *p*-score on the DIT. Other demographic variables were included.

While the DIT is an objective test, other variables were obtained from self-reported survey information.

## **METHODOLOGY**

### *Setting*

This study took place at a regional public university in 2011. The university is located in a predominately poor urban area. It is a commuter campus that currently enrolls approximately 5,500 students. The student body comes from 29 cities, a variety of social classes, and rural and urban areas. There is a high proportion of first-generation college students, nontraditional students, part-time students, and students who are the primary supporters of their families. All students are commuters. The student body is two-thirds female; two-thirds work an average of 28 hours per week, and more than one-

third are minority students. Students are predominantly enrolled in nursing (1300), arts and sciences (950), education (700), business (600), and the School of Public and Environmental Affairs (SPEA; 500). The School of Business earned the American Academy of Collegiate Schools of Business (AACSB) accreditation, which helped to strengthen the reputation of the school. Indiana traditionally has a manufacturing base, with jobs available in the steel mills and other factories located nearby. School enrollment varies inversely with the local economy. When the local economy strengthens, students are less likely to enroll at all or enroll for fewer hours. As the mills and local manufacturers experience setbacks and the Indiana economy switches to a service base, the area is seeing a growth in the professions, education, financial services, health care, and small businesses.

### *Data Collection*

This study was performed on data from a previously unpublished dissertation (Thomas 2011). The population for this study was enrolled at a single school. Participants included students with more than 40 hours of class credit who agreed to participate in the study. All eligible students were invited to participate via e-mail. A variety of students participating ensured that many college majors were included. A drawing for two \$250 gift certificates from Best Buy was offered as an incentive to participate in the study. The Institutional Review Board approved this study. The study used simple random sampling. The institutional research department was able to locate 1827 students who had completed more than 40 hours of credit. Twenty-four (24) students did not list e-mail addresses and were dropped from the list. E-mail invitations to take the survey were sent to the remaining students. Of the e-mail requests, 101 were undeliverable, leaving 1702 successful requests. After two weeks, another e-mail request was sent. After another two weeks, a final request was sent. The 327 total surveys represented a 19 percent response rate. Some of the surveys were incomplete or unusable; hence, the number of students who participated and were analyzed is 268. Of those, more than 40 percent were business students. Most were juniors and seniors. More than 70 percent were working, and more than 70 percent were female (Table 1). Slightly more than half (55 percent) were over 24 years old, and slightly more than half lived at home with their parents. Participants were predominantly single (64 percent) with no children. The average self-reported GPA was between 3 and 3.5. Most students were not first-generation students (66 percent), and participants were not primary family supporters (68 percent). Participants were primarily Caucasian (66 percent).

### *Dependent Variable*

The dependent variable used in the study is student moral judgment as measured by the DIT. The DIT measures the cognitive component of moral judgment only. Although this is one component of Rest's Four Component Model, it does not intend to measure behavior. This test presents three scenarios that examine moral dilemmas. Students are asked to weigh the various moral dilemmas of each case and to conclude



what they would recommend as a final course of action. Students determine the three most important factors in their decisions. Moral judgment is measured by the *p*-score from the DIT survey. This test has a long history and has been used in many studies. Although moral judgment does not imply ethical actions, it is one of Rest's four components of ethical action.

**Table 1. Participants' Background Characteristics**

Variable	Responses			
Working	Full 33%	Part 40%	Not 27%	
Gender	Female 73%	Male 27%		
Age	<25 45%	> 24 55%		
With Parents	Yes 45%	No 55%		
GPA	> 3.5 32%	> 3.0 38%	< 3.0 26%	
Marital Status	Single 64%	Married 28%	Divorced 8%	
Children	No 62%	Yes 38%		
College	1st Gen. 34%	Not 1st 66%		
Supporter	Yes 32%	No 68%		
Race	Af.17%	His. 9%	Cauc.66%	Other 8%
Rel. Serv.	Freq. 21%	Occ.48%	Never 31%	

Notes: Af.=African American; Cauc.=Caucasian; Freq.=frequently; Gen.=generation; His.=Hispanic; Occ.=occasionally; Rel. Serv.=attend religious services.

The DIT is used extensively to measure moral judgment based on its ease of use and popularity in many fields. Bampton and Cowton (2009) claim that around 25 percent of all accounting moral research since 1990 has used it. The DIT boasts face validity (Rest 1993), test-retest reliability (Davidson and Robbins, 1978), criterion group validity (Rest 1993), longitudinal validity (Rest, 1979), convergent divergent correlation (Rest, 1979), discriminate validity (Rest 1979), validation through experimental enhancement studies (Rest 1979), validation of faking studies (McGeorge 1975), and validation through studies of internal structure (Davidson and Robbins 1978).

One critique of the DIT implies that the moral judgment is influenced by political persuasion which understates the moral judgment of conservatives (Fisher and Sweeney 1998). Bay (2002) implies that biases including gender, politics, culture, and religion influence results along with dated questions. Although these critiques do not invalidate results, they suggest that results may be subject to various influences.

### *Independent Variables*

Independent variables included items that were identified by the literature review. Independent variables include college major, measures of religious orientation, certain student life experiences, measures of social support, measures of selected extracurricular experiences, and background variables.

*College Major.* College major was the first variable of interest. Although Pascarella and Terenzini (2005) stated that effects of college major were inconclusive, numerous studies have reported that a business or accounting college major limits moral judgment. They include articles by Armstrong (1984, 1987); Arnold and Ponemon (1991); Baxter and Rarick (1987); Goodlad, Soder, and Sirotnik (1990); King and Mayhew (2002); Icerman (1991); Lampe and Finn (1992); McNeel (1994b); Nucci and Pascarella (1987); Ponemon and Gabhart (1994); Ponemon and Glazer (1990); Rest (1986); Scott (1988); and Sims and Sims (1991).

*Religious Orientation.* Religion is whatever we do to confront existential questions, such as who are we and how we should relate to others (Batson and Ventis 1982). Although religious orientation is a multifaceted concept, we chose to measure it using the Batson and Ventis Religious Orthodoxy Scale and church attendance. Glock and Stark (1966) developed the Christian Orthodoxy Scale, which was later adapted by Batson and Ventis. Glock and Stark surveyed more than 3,000 people and interviewed more than 1,900 people in four counties of northern California. Later, they compared the data to a national survey and found the results to be consistent, although people in small towns and cities were more traditional in their religious beliefs than were urban dwellers. The internal reliability of their scale measured .92. Although an individual's religious feelings have many facets, research indicated that orthodoxy may tend to limit moral judgment. Scale scores represented student agreement on a five-point Likert scale with specific questions.

Scale scores represented student agreement on a five-point Likert Scale.

Higher orthodoxy scores were consistent with inhibiting moral judgment in studies published by Dirks (1988), Holly (1991), King and Mayhew (2002), Lawrence (1979), McNeel (1994b), Rest (1979, 1986), and Shaver (1987).

*Informal Curriculum.* Measures of the informal curriculum included measures of support and specific informal curriculum experiences. Measures of social support were taken from the Sarason Social Support Questionnaire (SSQ). Although this questionnaire has a long history in the medical field, it has recently been used in research in social science and student development. The SSQ was the product of a series of studies of hundreds of subjects, principally college students. Pilot investigations dealt with issues such as development, reliability, and psychometric characteristics. The test asks students to list the number of people who provided them support in a particular situation and the degree of satisfaction received. The correlations with the various other social support scales were over .70. The SSQ was found to have stability over a four-week period and high internal consistency among items. The short-form SSQ reports an internal reliability of .90 for number and .93 for satisfaction with the long-form SSQ. The short-form SSQ is highly similar to the SSQ in comparable scores and in its relationship to a variety of personality and social variables. Test reliability and internal consistency are high. SSQ has been used widely in clinical settings and has been found to relate to various individual differences (Sarason et al. 1987).

Average support satisfaction scores in this survey were 4.09, with a standard deviation of .49. Average student social support number scores in this survey were 3.04, with a standard deviation of 2.77. Sarason reported a number of studies with a social support number average of 4.25 and a social support satisfaction of 5.38.

Other measures of the informal curriculum include specific experiences that students are exposed to during their studies. Students responded to questions regarding service-learning experiences, extracurricular experiences, out-of-class contact with faculty, and role-playing experiences.

The average number of service-learning projects that students reported was 1.8, with a maximum of 16 projects. Students also reported an average of 2.56 extracurricular experiences, with a maximum of 20. Participants reported few (3.34/5) out-of-class contacts with faculty. Most students reported yes (1.22/2) on having role-taking experiences. Students were also asked to rate their satisfaction with each of these experiences on a six-point Likert scale. Their average satisfaction score was 4.19.

### Comparison of the Means

Based on the literature regarding the moral judgment of business students (reference 1, reference 2, reference 3), the authors developed these additional hypotheses.

*H<sub>o</sub>: The group composed of liberal arts students, nursing students, and non-business students will achieve equal or lower scores than the accounting students on the Defining Issues Test (DIT).*

*H<sub>a</sub>: The group composed of liberal arts students, nursing students, and non-business students will outscore accounting students on the Defining Issues Test (DIT).*

A two-sample t-test assuming unequal variances was performed on all scores of the accounting students versus all other, non-business, groups. A t-statistic of -1.687 is reported, allowing a rejection of the null hypothesis at a 95 percent confidence interval with  $p < .05$ . Results are reported in Table 2.

**Table 2. Two-Sample t-Test Assuming Unequal Variances, Accounting Student Mean Scores versus All Others**

	Accounting Students			All Others			95% CI for Mean Difference	t	df
	M	SD	n	M	SD	n			
Score on DIT	22.4	16.2	63	26.7	17.9	127	.76 to 9.6	-1.68*	137

Notes: Independent samples t-test.

A Cohen's d value was calculated for the size of the effect. Cohen's effect size value ( $d = .286$ ) suggests a small to medium practical significance.

\*  $p < .047$

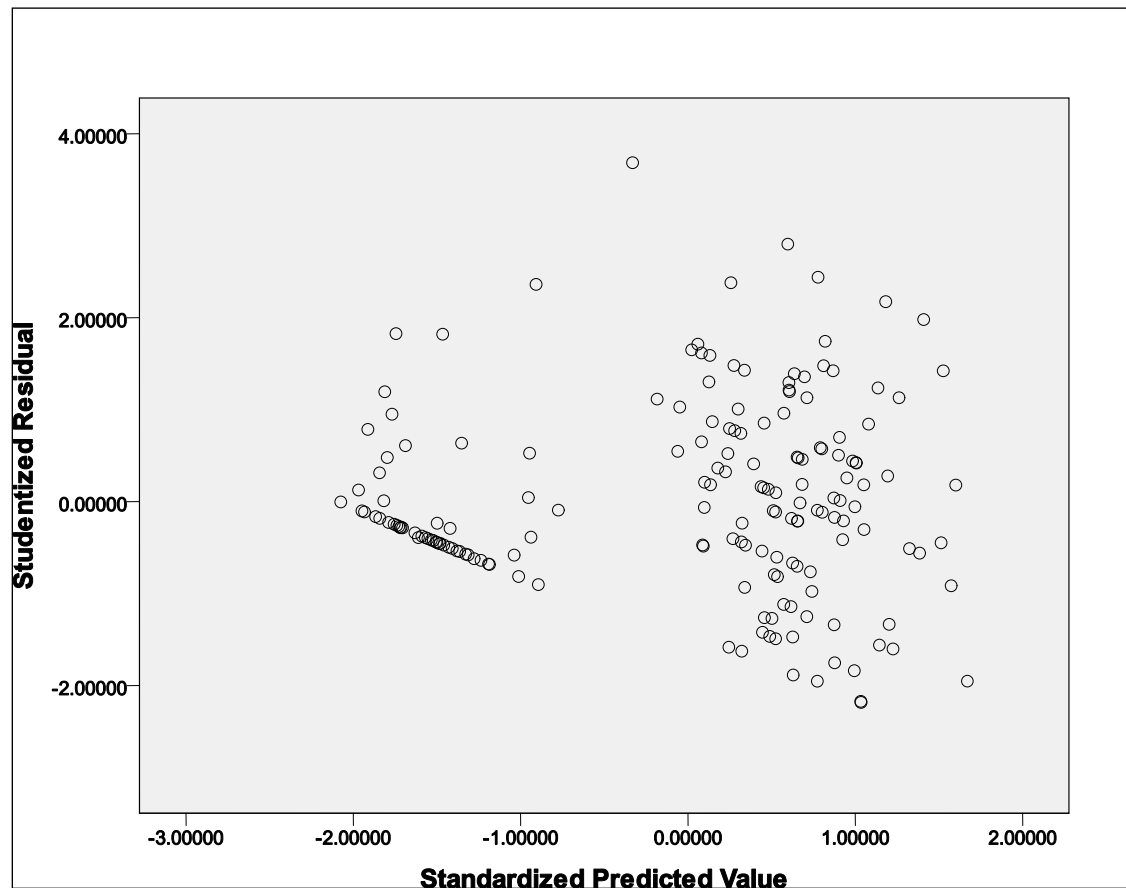
### *Data Analysis of the Regression*

Ordinary least squares (OLS) multiple regression analysis was used to determine how college major, religious orientation, social support, informal curriculum, and certain student life experiences were related to moral judgment scores of the survey participants. There were 268 students included in the analysis. Religious influence was measured using the Batson and Ventis Religious Orthodoxy Scale. Informal curriculum experiences were measured by the SSQ. Students also recorded responses to questions concerning frequency of experiences regarding service-learning, contact with faculty, extracurricular activities, and role taking. Several variables representing background variables were also included. They included working, whether students were family supporters, gender, and attending religious services.

In multiple regression, the number of cases needs to be substantial in relation to the number of independent variables. Tabachnick and Fidell (2007) suggest eight times the number of variables plus 50 for testing the multiple correlations, and eight times the number of variables plus 104 to test individual predictors. This study includes 268 students to account for 13 variables. Using a rule of thumb based on Green's (1991) article, "How many subjects does it take to do a regression analysis?" the metric  $N \geq 50 + 8p$  was used. Because we used OLS regression as opposed to the more demanding stepwise regression, we believe that the  $n$  of 268 exceeds the formula's required  $N$  of 154 by a substantive margin.

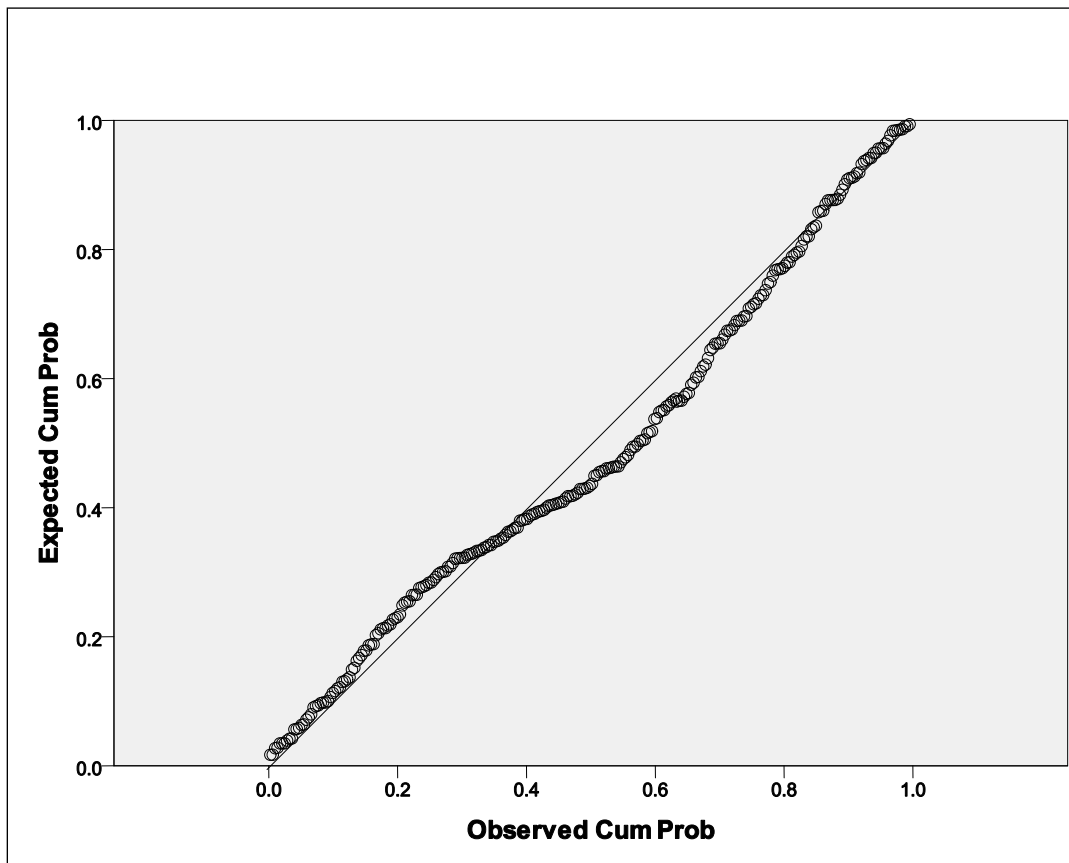
Data analyses also included testing the assumptions of multiple regression. The first assumption tested was independence. Errors (i.e., residuals) are assumed to be random and independent. Residuals should be randomly distributed. Violation of the independence assumption results in standard errors being either over- or underestimated. Positive correlations between the independent variables and residuals make estimates of error variance too small and inflate the Type I error rate. Negative correlations between the independent variables and the residuals make the estimates of error variance too large and results in loss of power (i.e., Type II error). The simplest way to assess independence is to examine the correlations between the residuals and the independent variables. The results revealed that the independent variables and residuals were not significantly correlated, indicating that the assumption of independence was met.

The next assumption underlying multiple regression is homogeneity of error variance. This assumption states that the conditional distributions have a constant variance for all values of  $X$ . If this assumption is violated, standard errors are larger and the validity of significance tests is affected. In addition, the conditional distribution may be non-normal. This is tested by plotting residual scores on predicted values. A fan-shaped distribution indicates that the variance in residual scores changes over values of the  $X$  variables. This plot is presented in Figure 1. An examination of the plot revealed some evidence of lack of homogeneity but no significant problems.

**Figure 1. Scatterplot of Studentized Residuals on Standardized Predicted Values**

The third assumption of multiple regression is that residuals are normally distributed. Violations lead to imprecision in the partial slopes (i.e., regression coefficients) and the coefficient of determination (i.e., estimate of explained variance). Several methods can detect normality violations. These methods include frequency distributions, normal probability plots, residual plots, skewness statistics, and searching for outliers. In this study, histograms and normal probability plots were examined. These charts are presented in Figures 2 and 3. An examination of the plots suggests that the residuals appear to be normally distributed.

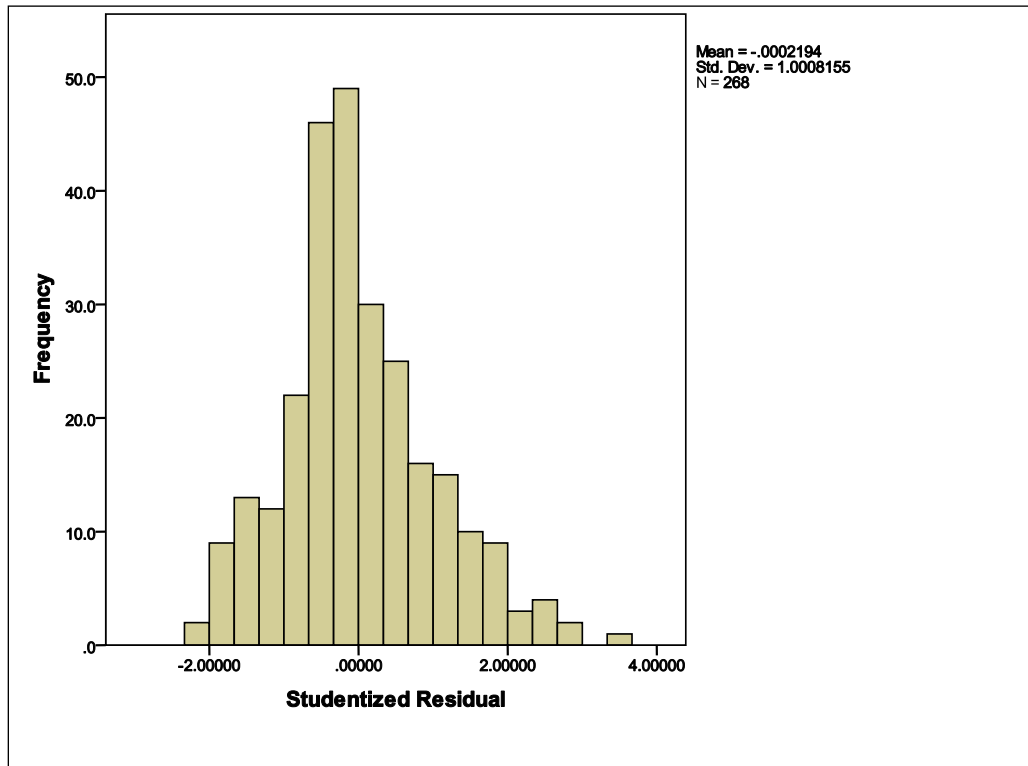
The fourth assumption is linearity of the relationships between the independent and dependent variables. Satisfying this assumption indicates that the sample partial slopes and the intercept are unbiased estimators of the population partial slopes and the population intercept. The presence of statistically significant linear relationships in the regression model is evidence of linear relationships, as is the absence of evidence of quadratic, cubic, or other nonlinear distributions in the plot of residuals on predicted values (see Figure 1). Both of these conditions were met, indicating that this assumption was satisfied.

**Figure 2. Normal Probability Plot of the Standardized Residuals**

The next assumption is that values of the independent variables (X) are fixed. The results of the regression model are valid only for those particular values of X that were observed and used in the analysis. It is not appropriate to make statements about the relationships between independent and dependent variables outside of the range of values used in the regression model. In this study, the regression results are valid only for those values observed and used in the analysis.

Another assumption is the absence of collinearity. This occurs when there is no strong linear relationship between two or more independent variables. Collinearity leads to instability of the regression coefficients, causing estimates to change in magnitude and even sign. It also results in inflated standard errors, making it difficult to achieve statistical significance. Collinearity restricts the utility and generalizability of the regression model. There are several methods of detecting collinearity. In this study, variance inflation factors (VIF) were calculated and examined for each variable to identify VIF coefficients greater than or equal to 10 (Lomax 2007). Results indicated that collinearity was not a problem in this study.

**Figure 3. Histogram of the Studentized Residuals**



### *Limitations*

There are several limitations to this study. This study takes place at one regional university that may not be representative of any other institution. Results are significant only to students enrolled at this institution and at other institutions that may be similar. Second, this survey was taken at a single point of time. Because this study is not longitudinal, it makes no claim to study development over time. The study only measures moral judgment and certain variables at a point in time. Students represented may not have had access to all of the potential influences when they took this survey. Students may change over time as their experiences and situations change. Third, it is difficult to gauge the representativeness of the attitudes of students who chose to answer the survey. Nonresponse is an issue. Students may have chosen to take the survey for different reasons. Students with certain attitudes may have been drawn to the survey while other attitudes discouraged participation. The DIT measures percent of responses that would agree with a moral philosopher as determined by James Rest. This may produce a bias by causing rules-bound behavior to register as a level of moral judgment. Religious influence is measured by Christian religious orthodoxy. Although there are many facets of and ways to measure religious influence, the study measured only Christian religious orthodoxy. Next, only a limited number of students answered the survey completely.

Based on the study guideline of having completed 40 hours of credit, only one-third of all students were eligible to take the survey. Of those eligible, only about one-fifth responded; therefore, only about 5 percent of students at this location were studied. Also, this study measured variables through a long survey. Fatigue might have been a factor affecting moral judgment levels. Finally, this is student self-reported data. Students may have faked data or entered whatever they believed was appropriate to report.

## RESULTS

### *Data Analysis and Interpretation of the t-test*

The mean scores of the accounting students on the DIT were significantly lower than the mean scores of all other students. The null hypothesis that mean scores of accounting students would be greater than or equal to the mean scores of all other students is rejected at the  $p < .05$  level. The alternative hypothesis is accepted because the mean scores of liberal arts and all other students was markedly higher than those of business students. The mean scores are 22.7 for business students versus 27.7 for all other, non-business, students.

The majority of literature regarding business students suggests that business students scored lower in moral judgment than did other students (King and Mayhew 2002; Pascarella and Terenzini 2005; Ponemon and Gabhart 1994). This is a fairly consistent finding (Baxter and Rarick 1987; Goodlad et al. 1990; McNeel 1994b; Scott 1988; Sims and Sims 1991). Other scholars have disagreed (Armstrong 1984, 1987; Arnold and Ponemon 1991; Lampe and Finn 1992; Ponemon and Glazer 1990; Shaub 1994).

### *Descriptive Statistics*

Descriptive statistics (i.e., mean standard deviation, skewness, and kurtosis) for the dependent and independent variables used in the regression are presented in Table 3.

While most of the variables appear to be normally distributed, the service-learning and extracurricular variables are heavily skewed, with the skewness statistic divided by the standard error resulting in a ratio of over 10. This violates the normality assumption of regression and may affect the results.

The correlations among the variables follow (Table 4). There are several statistically significant correlations. The dependent variable,  $p$ -score, is positively correlated with social support and negatively correlated with orthodoxy. Being a non-business major is positively correlated with working full time, with orthodoxy, and with social support, and is negatively correlated with supporting a family, attending religious services, role taking, and average life experience scores. Service-learning is significantly



correlated with extracurricular experiences and satisfaction from the informal curriculum. It is negatively correlated with role taking. Extracurricular experiences are significantly correlated with faculty contact and satisfaction with the informal curriculum. It is negatively correlated with role taking. Faculty contact is significantly correlated with extracurricular experiences and satisfaction with the informal curriculum; it is negatively correlated with role taking.

### *Regression Results*

An examination of the regression results indicated that the independent variables explained 36.8 percent of the variance in the moral judgment scores. Three (3) of the 13 independent variables were significantly related to moral judgment scores. Those variables were social support, college major (i.e., majoring in business), and orthodoxy scale. The implications of the regression results for the research questions are discussed in the sections that follow. Table 5 represents the results of the regression analysis.

### *National Norms for p-Scores.*

The average *p*-score in this study (including those with a “zero” score) was 22.59, with a standard deviation of 18.16. This compares to typical published data (Rest 1986), as shown in Table 6.

**Table 3. Descriptive Statistics for the Variables Included in the Regression Analysis**

Variables		Mean	S. Dev.	Skewness		Kurtosis	
	Stat.	Stat.	Stat.	Stat.	St. Err.	Stat.	St Er.
Major	268	.42	.49	.32	.15	−1.91	.30
I work	268	.33	.47	.72	.15	−1.50	.30
Gender	268	1.27	.44	1.05	.15	−.91	.30
Supporter	268	1.68	.47	−.79	.15	−1.39	.30
Rel. Sv.	268	1.79	.43	−1.1	.15	.17	.30
Ser. Lrn.	268	1.80	2.27	2.36	.15	8.16	.30
Ext. Exp.	268	2.58	3.13	3.21	.15	14.24	.30
Fac. Con.	268	3.33	1.07	−.49	.15	−.08	.30
Role Tk.	268	1.22	.41	1.39	.15	−.08	.30
Sat. Extra	268	4.23	1.41	−.97	.15	.37	.30
Life Exp	268	4.15	.47	−.85	.15	2.26	.30
O scale	268	20.99	6.77	−.62	.15	−.54	.30
Soc. Sp.	268	4.153	2.50	−.97	.15	−.92	.30
p Score	268	22.85	18.10	.48	.15	−.60	.30
Valid N	268						

Table 4. Correlations among the Variables Included in the Regression Analysis

Var.	Maj	Wrk	Gen	Supp	Rel	Ser	Ext	Fac	Rel	Sat	Lif	O	Soc	p
Major	1													
I work	.24*	1	0.096	-.149*	-.114	0.043	0.025	-.032	-.21*	0.103	-.12*	.18*	.17*	-.02
Genl	0.096	0.019	1	-.337*	-.101	0.056	-.12*	-.18*	-.044	-.006	-.112	0.052	0.028	0.052
Sup.	-.14*	-.33*	-.03	1	.13*	-.019	0.003	-.110	-.012	0.04	-.19*	-.036	0.061	-.03
Rel.	-.114	-.101	-.01	.137*	1	-.106	-.071	-.020	0.045	-.067	-.034	-.54*	0.042	0.067
Ser.	0.043	0.056	-.10	-.117	-.106	1	.24*	0.091	-.13*	.31*	.13*	.20*	0.093	0.117
Extra.	0.025	-.12*	0.003	0.053	-.071	.24*	1	.19*	-.18*	.27*	0.063	0.096	0.082	0.3
Fac	-.032	-.18*	-.11	0.039	-.020	0.091	.19*	1	-.22*	.34*	.32*	0.039	-.031	0.008
Role	-.21*	-.044	-.01	.144*	0.045	-.13*	-.18*	-.22*	1	-.53*	-.053	-.14*	-.12*	-.08
Sat.Ex	0.103	-.006	0.04	-.110	-.067	.31*	.27*	.34*	-.53*	1	.20*	.14*	.14*	0.117
Life	-.12*	-.112	-.19*	-.057	-.034	.13*	0.063	.32*	-.05	.20*	1	0.117	-.008	0.031
O	.18*	0.052	-.03	-.19*	-.54*	.20*	0.09	0.039	-.14*	.14*	0.117	1	-.05	-.17*
Soc	.17*	0.028	0.061	0.042	0.093	-.002	0.082	-.031	-.12*	.14*	-.008	-.05	1	.56*
p	-.02	0.05	-.03	0.067	0.117	-.02	0.03	0.008	-.08	0.117	0.031	-.17*	.566*	1

\* Correlation is significant at the 0.05 level (two-tailed).

**Table 5. Results of the Regression Analysis**

Model	Unstandardized Coefficients		Stand. Coeff.	t	Collinearity Statistics	
	B	St. Error	Beta		Tol.	VIF
(Constant)	11.569	13.353		.866		
Major *	-4.314	1.999	-.118	-2.158	.833	1.200
I work	3.359	2.141	.088	1.569	.799	1.252
Gender	-2.470	2.114	-.061	-1.169	.925	1.081
Supporter	1.483	2.132	.038	.696	.825	1.212
Rel. Serv.	-.974	2.549	-.023	-.382	.694	1.441
Soc Sup *	4.115	.377	.569	10.926	.918	1.089
Ser Learn	-.223	.437	-.028	-.509	.824	1.214
Ext Exp	-.061	.312	-.011	-.196	.855	1.170
Fac. Cont	.045	.972	.003	.046	.759	1.318
Role	-1.356	2.675	-.031	-.507	.669	1.494
Sat. Ext.	.780	.846	.061	.921	.570	1.753
Ave Life	1.024	2.131	.027	.481	.816	1.225
O scale*	-.391	.166	-.146	-2.360	.647	1.546

Note:  $R^2 = .368$

\*  $p < 0.05$

**Table 6. National Norms for  $p$ -Scores**

Education	$p$ -Score	Standard Deviation
Junior High	19.8	6.3
High School	30.4	10.9
College	45.9	12.2

### *Effects of College Major on Moral Judgment*

The first research question concerned the effect of college major on the development of moral judgment. The regression results indicated that college major was significantly related to moral judgment. Business students on the whole had lower  $p$ -scores than those students who did not major in business. Students who did not major in business displayed a mean  $p$ -score of 23.10, while all business majors had a mean score of 21.91. Subsequent analyses separated the business students into students majoring in business administration and students majoring in accounting. Business administration majors reported a mean  $p$ -score of 23.69, while accounting majors reported a mean score of 20.97. An analysis of variance revealed that the  $p$ -scores of business administration majors was not significantly higher than the  $p$ -scores of accounting majors ( $F = .27$ ;

df= 2;  $p < .764$ ). Thus, accounting majors are not responsible for the lower  $p$ -scores of business majors. This is consistent with the majority of the literature.

#### *Effects of Religious Orthodoxy on Moral Judgment*

The second research question focused on how students' religious inclinations were related to moral judgment. Religion was operationally defined using religious orthodoxy scores. The regression analysis revealed that religious orthodoxy was significantly and negatively related to moral judgment. Participants were also asked if they attended religious services. Participants who expressed views high in religious orthodoxy tended to attend church services more frequently than those whose expressed views that were not high in religious orthodoxy ( $r = -.54^{**}$ ). Although attending religious services was positively related with moral judgment scores ( $r = .117$ ), the regression analysis revealed that the relationship was not significant when other variables were included in the analysis. This is consistent with previous literature.

#### *Effects of the Informal Curriculum on Moral Judgment*

The third research question focused on the relationship between the informal curriculum and moral judgment. The informal curriculum was measured using questions about social support, service learning, faculty contact, extracurricular activities, role taking, and student satisfaction. Only satisfaction with social support accounted for significant variances in student moral judgment. The product-moment correlation between social support and moral judgment was also statistically significant ( $r = .566^{**}$ ). Social support was also significantly correlated with satisfaction with informal curricular experiences ( $r = .149$ ). There is no literature regarding social support and moral judgment.

### **IMPLICATIONS**

This study suggests a number of implications. Initially, this study reminds us that student groups are different from each other. Students at a regional urban university tend to be commuter students, and many are part-time students. Students in this study were exposed to additional noneducational influences, including commuting, work, travel, and family. The influence of traditional indirect influences such as service-learning and engagement experiences, role playing, meeting with professors, and other extracurricular experiences do not seem to have the same effect as with traditional students. Although most of these students had extensive extracurricular experiences, those experiences did not have a significant impact.

This group of students exhibited low moral judgment scores. Their average score was equivalent to those of junior high school scores in previous studies. Factors affecting these students may have resulted in lower scores.

Religious orthodoxy scores seem to limit moral judgment even for this low-scoring group. While the literature suggests that participants who score high in orthodoxy are limited in moral judgment, this group displayed a larger than expected effect.

Although support is significant in this study, very little in the literature suggests that it can be influential. Although medical and social science literature have numerous articles suggesting the benefits of social support, few such articles are in the business literature. This study suggests that support is especially important to this particular group.

Business students again were significantly behind in moral judgment. There is limited analysis of reasons why this is common. There is a need to examine business education in light of student development theory.

## **DISCUSSION**

Implications suggest that there is no magic way to increase student moral judgment. More emphasis needs to be placed on student development theory. Chickering (1993), for example, notes that competence, interdependence, emotions, identity, purpose, and integrity are all related. He suggests that even in the technical majors, personal development and soft skills are important. College programs need to develop these skills through extracurricular activities. Further research is needed to examine student groups along with student development theory.

The concept of social capital may be important to examine. It may be that business students pay less attention to social skills and to developing social capital than do students of other majors. Results here suggest that diversity acceptance may be an issue.

The study suggests that training may be needed. Students may need to be trained in the application of ethical behavior through mentoring, cooperative education, and internship opportunities. Aristotle believed that the best way to encourage ethical behavior was to practice ethical behavior (Brooks 2011). Recent studies have shown some success with mentoring and cooperative education (Saat, Porter, and Woodbine 2010).

Additional research is suggested in this study. The authors are working on a factor analysis to further define the effects reported.

Additional research is needed to examine this study in terms of student development theory. The authors are examining the results in terms of Chickering's (1993) vector of student development.

## **CONCLUSION**

The authors believe that in these difficult times, business students need to display the same high standards of ethical behavior as their liberal arts and sciences as well as health science counterparts. This study has shown that as of this time at the university that was examined, they don't. Beyond the brief points mentioned, the precise nature of

how to implement a full-scale ethics training program addressing this deficiency is beyond the scope of the study; hence, determining the exact nature of such an ethics-training curriculum is suggested for future research.

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